SAI ENGINEERING FOUNDATION

SAI BHAWAN, SECTOR-4, NEW SHIMLA-171009 (H.P.)
PHONE: 0177-2670349 / 2671268 FAX NO: 0177-2672915

Full Title of the Project :- **Tundah-II Hydro Electric Project.**
File No. :- **FP/HP/HYD/49283/2020.**
Date of Proposal :- **31/08/2020.**

Check List Serial No. 28-(i).

RECLAMATION PLAN OF MUCK DUMPING SITES

The Reclamation Plan of proposed Fifteen Number (15 Nos.) Muck Dumping Sites has been prepared as shown in the various appropriate locations in the proposal. As per the proposal about 243393 cum. muck shall be generated from various components (including 45% of the increased volume factor), out of which 144678 cum. muck shall be utilized in various components for the construction of retaining walls / breast walls & strengthening of the various components and rest of the muck about 98715 cum shall be dumped in Fifteen Numbers (15 Nos.) Muck Dumping Sites as shown in the proposal folders. The total capacity of fifteen numbers of Muck Dumping Sites is approximately 102794 cum., which is sufficient to dump the muck generated from various components of the proposed project.

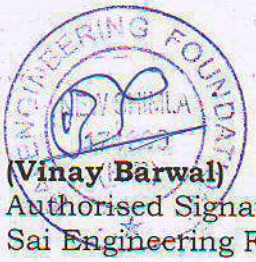
Therefore, to stabilize the muck in well protected manner, the following works shall be done in two parts:-

PART-1 (Shall be implemented by the User Agency):-

S.No.	Description	Qty	Unit	Rate	Amount (Rs.)
1.	**Muck Dumping Site No-1.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	58	Nos.	3700/-	2,14,600/-
2.	**Muck Dumping Site No-2.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	72	Nos.	3700/-	2,66,400/-
3.	**Muck Dumping Site No-3.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	80	Nos.	3700/-	2,96,000/-
4.	**Muck Dumping Site No-4.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	54	Nos.	3700/-	1,99,800/-
5.	**Muck Dumping Site No-5.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	108	Nos.	3700/-	3,99,600/-
6.	**Muck Dumping Site No-6.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	156	Nos.	3700/-	5,77,200/-
7.	**Muck Dumping Site No-7.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	114	Nos.	3700/-	4,21,800/-
8.	**Muck Dumping Site No-8.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	102	Nos.	3700/-	3,77,400/-
9.	**Muck Dumping Site No-9.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	136	Nos.	3700/-	5,03,200/-

10.	**Muck Dumping Site No-10.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	51	Nos.	3700/-	1,88,700/-
11.	**Muck Dumping Site No-11.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	152	Nos.	3700/-	5,62,400/-
12.	**Muck Dumping Site No-12.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	92	Nos.	3700/-	3,40,400/-
13.	**Muck Dumping Site No-13.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	142	Nos.	3700/-	5,25,400/-
14.	**Muck Dumping Site No-14.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	192	Nos.	3700/-	7,10,400/-
15.	**Muck Dumping Site No-15.** Boulders filling with wire crates. (2.5mx1.25mx1.50m).	63	Nos.	3700/-	2,33,100/-
Total		**1572**	**Nos.**		**58,16,400/-**
Rupees Fifty Eight Lakh Sixteen Thousand Four Hundred Only.					

Dated : 31/08/2020.
Place : Bharmour.



(Vinay Barwal)
Authorised Signatory,
Sai Engineering Foundation.

PART-2 (Shall be implemented by the Forest Department):-

COST OF RECLAMATION OF MUCK DUMPING SITES

Particulars of works	Area (in Hect.)	Plantation Norm per Hect.	Plantation cost	Plants to be planted per Hect.	Total no. of plants to be planted	Nursery cost per plant	Total Nursery Cost	Total= Plantation cost + Total nursery cost (Col 4+8)	Year of Execution of Works	Add 10% Escalation for undertaking works in subsequent year	Total Amount (Col. 9+11)
1	2	3	4	5	6	7	8	9	10	11	12
A. Initial cost for Reclamation of Muck Dumping Sites :-											
0 year / new plantation	4.2877	92500	396612	1100	4716	28.03	132189	528801	2021-22	52880	581681
Soil & Moisture Conseravtion Works @ 25% of Planting Cost											145420
										Total - A	**727101**
B. Maintenance Cost for Reclamation of Muck Dumping Sites :-											
Ist year maintenance	4.2877	10430	44721	330	1415	28.03	39662	84383	2022-23	8438	92821
2nd year maintenance	4.2877	7030	30143	220	943	28.03	26432	56575	2023-24	5657	62232
3rd year maintenance	4.2877	3645	15629	110	472	28.03	13230	28859	2024-25	2886	31745
4th year maintenance	4.2877	3645	15629	110	472	28.03	13230	28859	2025-26	2886	31745
5th year maintenance	4.2877	3645	15629	110	472	28.03	13230	28859	2026-27	2886	31745
6th year maintenance	4.2877	3645	15629	110	472	28.03	13230	28859	2027-28	2886	31745
7th year maintenance	4.2877	3645	15629	110	472	28.03	13230	28859	2028-29	2886	31745
8th year maintenance	4.2877	3645	15629	110	472	28.03	13230	28859	2029-30	2886	31745
8th year maintenance	4.2877	3645	15629	110	472	28.03	13230	28859	2030-31	2886	31745
10th year maintenance	4.2877	3645	15629	110	472	28.03	13230	28859	2031-32	2886	31745
										Total-B	**409013**
										Total - A+B	**1136114**
										(C) Add Contigencies Charges @ 5 % on A+B.	56806
										Total - C	**1192920**
										Add Departmental Charges of Supervision @ 17.5 % on C.	208761
										Grand Total	**1401681**

(Rupees Fourteen Lakh One Thousand Six Hundred Eighty One Only)

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72

NOTE:-

1. The first part for the construction of check walls with wire crates stones and filling of excavated material shall be done by the User Agency itself. As per the proposal **Rs. 58,16,400/-** only has been proposed for the civil engineering works. The civil engineering works will be carried out before any dumping at the muck dumping sites.

2. The second part for raising suitable plantation etc on the muck dumping sites shall be implemented by the Forest Department at the cost of the User Agency. As per the proposal **Rs. 14,01,681/-** has been proposed. The User Agency shall have to deposit **Rs. 14,01,681/-** with the Forest Department for raising suitable plantation.

Necessary rehabilitation measures for the un-used dumped material at different dumping sites shall be carried out by afforestation to provide vegetation cover thereon.

Dated: 31/08/2020

Place : Bharmour

Range Forest Officer,
Forest Range Bharmour,

SAI ENGINEERING FOUNDATION NEW SHIMLA 171009 (H.P.) INDIA

(Vinay Barwal)
Authorised Signatory,
Sai Engineering Foundation,

73

Full Title of the Project : - **Tundah-II Hydro-Electric Project.**
File No. : - **FP/HP/HYD/49283/2020.**
Date of Proposal : - **31/08/2020.**

Check List Sr. No.28. (II).

DETAIL OF MUCK DUMPING SITES WITH RESPECT TO TUNDAH-II HYDRO-ELECTRIC PROJECT(24 MW).

S. No.	NAME OF MUCK DUMPING SITES	LOCATION OF MUCK DUMPING SITE.	SIZE OF DUMPING SITES (IN METERS)		Area (In Sqm.)	Average Height (In Mtrs.)	Capacity of Muck Dumping Sites (In Cum.)
			L	B			
1	Muck Dumping Site No.-1.	Along the Approach Road-I to Barrage Site.	42.67	14.22	606.76	2.50	1516.90
2	Muck Dumping Site No.-2.	Along Water Conductor System -I.	71.12	9.95	707.64	3.00	2122.92
3	Muck Dumping Site No.-3.	Near De-silting Tank.	64.00	17.06	1091.84	2.50	2729.60
4	Muck Dumping Site No.-4.	Near Outlet point of HRT-I.	35.56	12.80	455.16	3.00	1365.48
5	Muck Dumping Site No.-5.	Along the Approach Road-II to Barrage Site.	-	-	2078.00	2.00	4156.00
6	Muck Dumping Site No.-6.	Along the Approach Road-II to Barrage Site.	-	-	5254.00	3.00	15762.00
7	Muck Dumping Site No.-7.	Along the Approach Road-II to Barrage Site.	56.89	42.67	2427.49	2.00	4854.98
8	Muck Dumping Site No.-8.	Along the Approach Road-II to Barrage Site.	56.89	34.13	1941.65	2.00	3883.30
9	Muck Dumping Site No.-9.	Near Adit-I.	99.56	35.56	3540.35	2.00	7080.70
10	Muck Dumping Site No.-10.	Along the Approach Road-II to Barrage Site.	56.89	35.56	2023.00	1.50	3034.50
11	Muck Dumping Site No.-11.	Along the Approach Road-II to Barrage Site.	85.34	51.20	4369.40	2.00	8738.80
12	Muck Dumping Site No.-12.	Near Adit-II.	113.79	56.89	6473.51	1.50	9710.27
13	Muck Dumping Site No.-13.	Along the Approach Road to Vertical Drop Shaft.	106.68	35.56	3793.54	2.00	7587.08
14	Muck Dumping Site No.-14.	Near Power House.	-	-	6027.00	4.50	27121.50
15	Muck Dumping Site No.-15.	Along the Approach Road to Power House Site.	122.32	17.06	2086.77	1.50	3130.15
TOTAL					**42876.11**	**-**	**102794.18**
OR SAY					**42877**		**102794**

Date : 31.08.2020.
Place : BHARMOUR.

SAI ENGINEERING FOUNDATION NEW SHIMLA 171009 (H.P)

(Vinay Barwal)
Authorised Signatory
Sai Engineering Foundation

Full Title of the Project : - **Tundah-II Hydro-Electric Project.**
File No. : - **FP/HP/HYD/49283/2020.**
Date of Proposal : - **31/08/2020.**

Check List Sr. No.28. (III).

COMPONENT WISE DETAIL OF MUCK GENERATED WITH RESPECT TO TUNDAH-II HYDRO-ELECTRIC PROJECT(24 MW).

S. No.	Name of Component	Quantity of Muck Generated (In Cum.)	Quantity of Muck Including @ 45% swelling fecter	Qty. of Muck to be utilised	Qty. of Muck to be dumped
1	Diversion Barrage & Intake Structure.	26546.00	38491.70	26944.19	11547.51
2	Water Conductor System -I.	4465.00	6474.25	4531.97	1942.28
3	De-Silting Tank & Silt Flushing Channel.	8607.00	12480.15	9360.11	3120.04
4	Head Race Tunnel (HRT-I) & Aquaduct	2342.00	3395.90	2546.92	848.98
5	Head Race Tunnel (HRT-II)	9236.00	13392.20	6026.49	7365.71
6	Adit-I	645.00	935.25	420.86	514.39
7	Adit-II	1429.00	2072.05	932.42	1139.63
8	Underground Surge Shaft.	2409.00	3493.05	1571.87	1921.18
9	Penstock Tunnel.	9276.00	13450.20	6052.59	7397.61
10	Power House, Tail Race Tunnel & MAT	13627.00	19759.15	5927.74	13831.41
11	Approach Road to Power House.	14350.00	20807.50	6242.25	14565.25
12	Approach Road to Vertical Dropshaft.	3600.00	5220.00	2349.00	2871.00
13	Approach Road-I to Barrage Site.	5075.00	7358.75	5887.00	1471.75
14	Approach Road-II to Barrage Site.	62500.00	90625.00	63437.50	27187.50
15	Approach Road to Adit-II.	3750.00	5437.50	2446.87	2990.63
TOTAL MUCK TO BE PRODUCED (IN CUM.)		**167857.00**	**243392.65**	**144677.78**	**98714.87**
OR SAY		**167857**	**243393**	**144678**	**98715**

Date : 31.08.2020.
Place : BHARMOUR.

SAI ENGINEERING FOUNDATION NEW SHIMLA 171009 (H.P.)

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Full Title of the Project : - **Tundah-II Hydro-Electric Project.**
File No. : - **FP/HP/HYD/49283/2020.**
Date of Proposal : - **31/08/2020.**

Check List Serial No. 28 (IV).

SUMMARY OF MUCK TO BE DUMPED IN EACH DUMPING SITE

S. No.	Name of Component.	Balance Quantity of Muck/ Debris to be Dumped after Re-use (In	Capacity of dumping Sites (In CUM)
1	**Muck Dumping Site No-1. (Along the Approach Road-I to Barrage Site.)**		**1516.90**
I)	Approach Road No-I to Barrage Site. = 100%.	1471.75	
	Total Muck to be Dumped in Muck Dumping Site No-1.	**1471.75**	
2	**Muck Dumping Site No-2. (Along Water Conductor System -I.)**		**2122.92**
I)	Water Conductor System -I. = 100%	1942.28	
	Total Muck to be Dumped in Muck Dumping Site No-2.	**1942.28**	
3	**Muck Dumping Site No-3. (Near De-silting Tank.)**		**2729.60**
I)	De-Silting Tank & Silt Flushing Channel. = 70%.	2184.02	
II)	Head Race Tunnel (HRT-I). = 50%.	423.95	
	Total Muck to be Dumped in Muck Dumping Site No-3.	**2607.97**	
4	**Muck Dumping Site No-4. (Near Outlet point of HRT-I.)**		**1365.48**
I)	De-Silting Tank & Silt Flushing Channel. = 30%.	936.02	
II)	Head Race Tunnel (HRT-I). = 50%.	423.94	
III)	Aquaduct. = 100%.	1.09	
	Total Muck to be Dumped in Muck Dumping Site No-4.	**1361.05**	
5	**Muck Dumping Site No-5. (Along the Approach Road-II to Barrage Site.)**		**4156.00**
I)	Approach Road-II to Barrage Site. = 15%.	4078.13	
	Total Muck to be Dumped in Muck Dumping Site No-5.	**4078.13**	
6	**Muck Dumping Site No-6. (Along the Approach Road-II to Barrage Site.)**		**15762.00**
I)	Diversion Barrage & Intake Structure. = 100%.	11547.51	
II)	Approach Road-II to Barrage Site. = 15%.	4078.12	
	Total Muck to be Dumped in Muck Dumping Site No-6.	**15625.63**	
7	**Muck Dumping Site No-7. (Along the Approach Road-II to Barrage Site.)**		**4854.98**
I)	Approach Road-II to Barrage Site. = 15%.	4078.12	
	Total Muck to be Dumped in Muck Dumping Site No-7.	**4078.12**	
8	**Muck Dumping Site No-8. (Along the Approach Road-II to Barrage Site.)**		**3883.30**
I)	Approach Road-II to Barrage Site. = 13%.	3534.38	
	Total Muck to be Dumped in Muck Dumping Site No-8.	**3534.38**	

9	**Muck Dumping Site No-9. (Near Adit-I.)**		**7080.70**
I)	Head Race Tunnel (HRT-II). = 88%.	6481.82	
II)	Adit-I. = 100%.	514.39	
Total Muck to be Dumped in Muck Dumping Site No-9.		**6996.21**	
10	**Muck Dumping Site No-10. (Along the Approach Road-II to Barrage Site.)**		**3034.50**
I)	Approach Road-II to Barrage Site. = 10%.	2718.75	
Total Muck to be Dumped in Muck Dumping Site No-10.		**2718.75**	
11	**Muck Dumping Site No-11. (Along the Approach Road-II to Barrage Site.)**		**8738.80**
I)	Approach Road-II to Barrage Site. = 32%.	8700.00	
Total Muck to be Dumped in Muck Dumping Site No-11.		**8700.00**	
12	**Muck Dumping Site No-12. (Near Adit-II.)**		**9710.27**
I)	Head Race Tunnel (HRT-II). = 12%.	883.89	
II)	Adit-II. = 100%.	1139.63	
III)	Approach Road to Adit-II. = 100%.	2990.63	
IV)	Surge Shaft. = 100%.	1921.18	
V)	Penstock Tunnel. = 37%.	2737.12	
Total Muck to be Dumped in Muck Dumping Site No-12.		**9672.45**	
13	**Muck Dumping Site No-13. (Along the Approach Road to Vertical Drop Shaft.)**		**7587.08**
I)	Penstock Tunnel. = 63%.	4660.49	
II)	Approach Road to Vertical Dropshaft. = 100%.	2871.00	
Total Muck to be Dumped in Muck Dumping Site No-13.		**7531.49**	
14	**Muck Dumping Site No-14. (Near Power House.)**		**27121.50**
I)	Power House, Tail Race Tunnel & MAT = 100%.	13831.41	
II)	Approach Road to Power House. = 80%.	11652.20	
Total Muck to be Dumped in Muck Dumping Site No-14.		**25483.61**	
15	**Muck Dumping Site No-15. (Along the Approach Road to Power House Site.)**		**3130.15**
I)	Approach Road to Power House. = 20%.	2913.05	
Total Muck to be Dumped in Muck Dumping Site No-15.		**2913.05**	
GRAND TOTAL		**98714.87**	**102794.18**
OR SAY		**98715**	**102794**

Date : 31.08.2020.
Place : BHARMOUR.

SAI ENGINEERING FOUNDATION NEW SHIMLA 171009 (H.P)

(Vinay Barwal)
Authorised Signatory
Sai Engineering Foundation

77

Full Title of the Project : - **Tundah-II Hydro-Electric Project.**
File No. : - **FP/HP/HYD/49283/2020.**
Date of Proposal : - **31/08/2020.**

Check List Sr. No.28. (V).

SUMMARY OF MUCK GENERATED / UTILISATION.

S. No.	Name of the Component from where muck/debries is to be produced.	Total quantity of muck / debries to be produced.	Total quantity of muck/ debries produced i/c @ 45% swelling factor.	Qty. of muck/ debries to be utilised.	Qty. of muck/ debries to be dumped.	Name of Dumping Place.	Slope of dumping place.	Location of dumping place / village/ police station and nearby road.	Distance of dumping place from nearby river with name of river	Area of dumping place with length and breadth			Area of Muck Dumping Place	Expected Volume / Capacity of Muck Dumping Sites.	Remarks
		(Cum.)	(Cum.)	(Cum.)	(Cum.)				(Kms)	L	B	H	(In Hect.)	(In Cum.)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Approach Road No-I to Barrage Site.	5075.00	7358.75	5887.00	1471.75	Muck Dumping Site No-1	25°	Mohal Tundah / Tundah / P.S. Bharmour / Bharmour -Badgran Road.	0.0035	42.67	14.22	2.50	0.0607	1516.90	Maximum muck generated shall be re-utilised / consumed for the constructrion of breast walls, retaining walls, wing walls, soling and levelling of road & other protection work of defferent project components i.e. Water Conductor System, De-silting Tank and the protection work of aproach Road. The maximum muck shall be re-utilised for levelling and raising the height of Switchyard. Rest of muck shall be dumped in muck dumping sites No- 1 to 15 as proposed at various locations in the proposal.
2	Water Conductor System - I.	4465.00	6474.25	4531.97	1942.28	Muck Dumping Site No-2	25°		0.0025	71.12	9.95	3.00	0.0708	2122.92	
3	De-Silting Tank, Silt Flushing Channel, Head Race Tunnel (HRT-I) & Aquaduct.	10949.00	15876.05	11907.03	3969.02	Muck Dumping Site No-3	15°		0.0015	64.00	17.06	2.50	0.1092	2729.60	
						Muck Dumping Site No-4	15°		0.0020	35.56	12.80	3.00	0.0455	1365.48	
4	Head Race Tunnel (HRT-II), Adit-I, Adit-II, Approach Road to Adit-II, Surge Shaft, Penstock Tunnel, Approach Road to Vertical Dropshaft.	30345.00	44000.25	19800.10	24200.15	Muck Dumping Site No-9	30°	Mohal Sird / Sird / P.S. Bharmour / Bharmour -Badgran Road.	0.0020	99.56	35.56	2.00	0.3540	7080.70	
						Muck Dumping Site No-12	'30°		0.0025	113.79	56.89	1.50	0.6474	9710.27	
						Muck Dumping Site No-13	'30°		0.0230	106.68	35.56	2.00	0.3794	7587.08	
5	Power House, Tail Race Tunnel, MAT & Approach Road to Power House / Tail Race.	27977.00	40566.65	12169.99	28396.66	Muck Dumping Site No-14	15°		0.0010	-	-	4.50	0.6027	27121.50	
						Muck Dumping Site No-15	15°		0.0020	122.32	17.06	1.50	0.2087	3130.15	

6	Diversion Barrage, Intake Structure & Approach Road-II to Barrage Site.	89046	129116.70	90381.69	38735.01	Muck Dumping Site No-5	30°	Mohal Palan / Panjari / P.S. Bharmour / Bharmour -Badgran Road.	0.0250	-	-	2.00	0.2078	4156.00	
						Muck Dumping Site No-6	15°		0.0025	-	-	3.00	0.5254	15762.00	
						Muck Dumping Site No-7	25°	Mohal Sird / Sird / P.S. Bharmour / Bharmour -Badgran Road.	0.0275	56.89	42.67	2.00	0.2427	4854.98	
						Muck Dumping Site No-8	30°		0.0275	56.89	34.13	2.00	0.1942	3883.30	
						Muck Dumping Site No-10	20°		0.0315	56.89	35.56	1.50	0.2023	3034.50	
						Muck Dumping Site No-11	25°		0.0350	85.34	51.20	2.00	0.4369	8738.80	
GRAND TOTAL		**167857.00**	**243392.65**	**144677.78**	**98714.87**		-	-	-	-	-	-	**4.2877**	**102794.18**	
OR SAY		**167857**	**243393**	**144678**	**98715**		-	-	-	-	-	-	**4.2877**	**102794**	

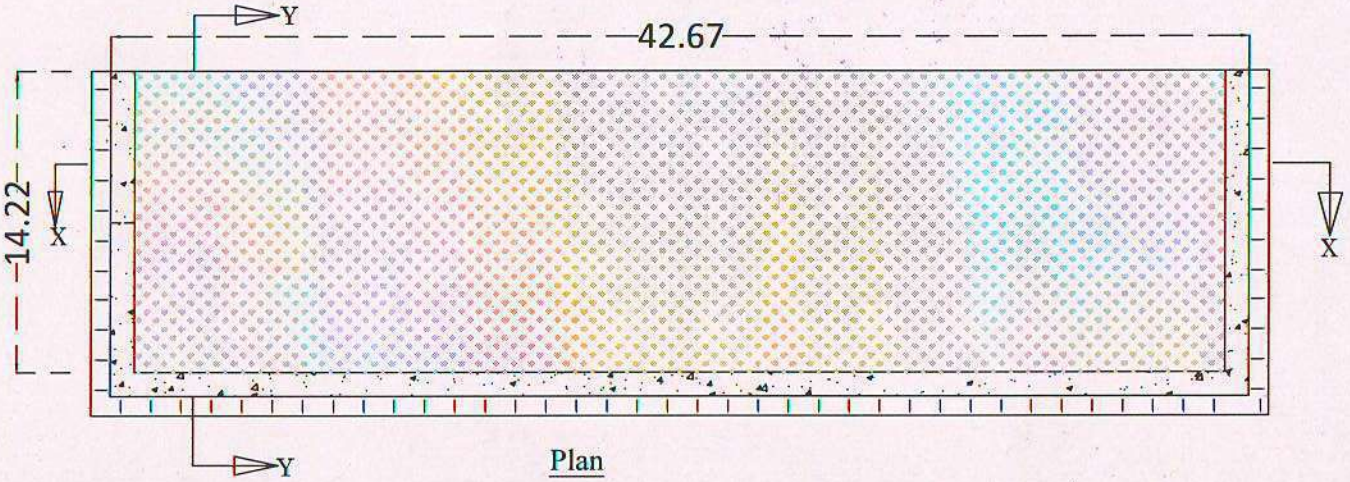
ABSTRACT				
1	**Total quantity of Muck / Debris to be produced.**	=	**167857**	**Cum.**
2	**Total quantity of Muck / Debris generated (including 45% swelling factor).**	=	**243393**	**Cum.**
3	**Total quantity of Muck / Debris to be re-utilised.**	=	**144678**	**Cum.**
4	**Total quantity of Muck / Debris to be dumped.**	=	**98715**	**Cum.**
5	**Total area of Muck Dumping Sites.**	=	**4.2877**	**Hect**
6	**Total capacity of Muck Dumping Sites.**	=	**102794**	**Cum.**

SAI ENGINEERING FOUNDATION NEW SHIMLA 171009 (H.P)

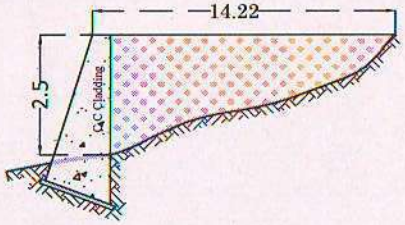
(Vinay Barwal)
Authorised Signatory,
Sai Engineering Foundation.

Name of Project Tundah-II H.E.P(24.0MW)

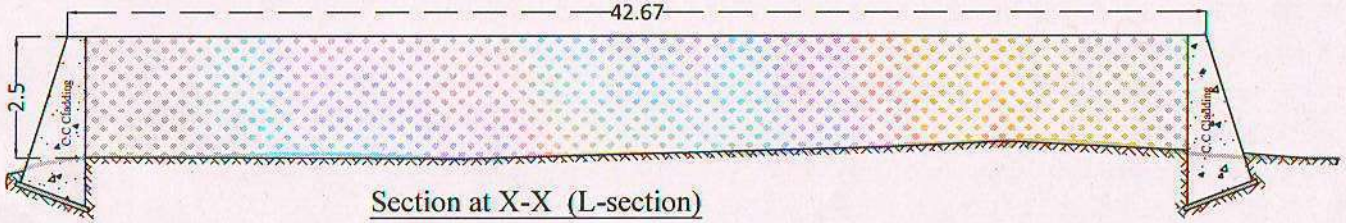
Dumping site No-1 (Along the Apporach road -II to Barrage site)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area = 42.67m X 14.22m=606.76m²
Average Height =2.5m
Capacity of muck dumping
= 606.76x2.5=1516.90cum.

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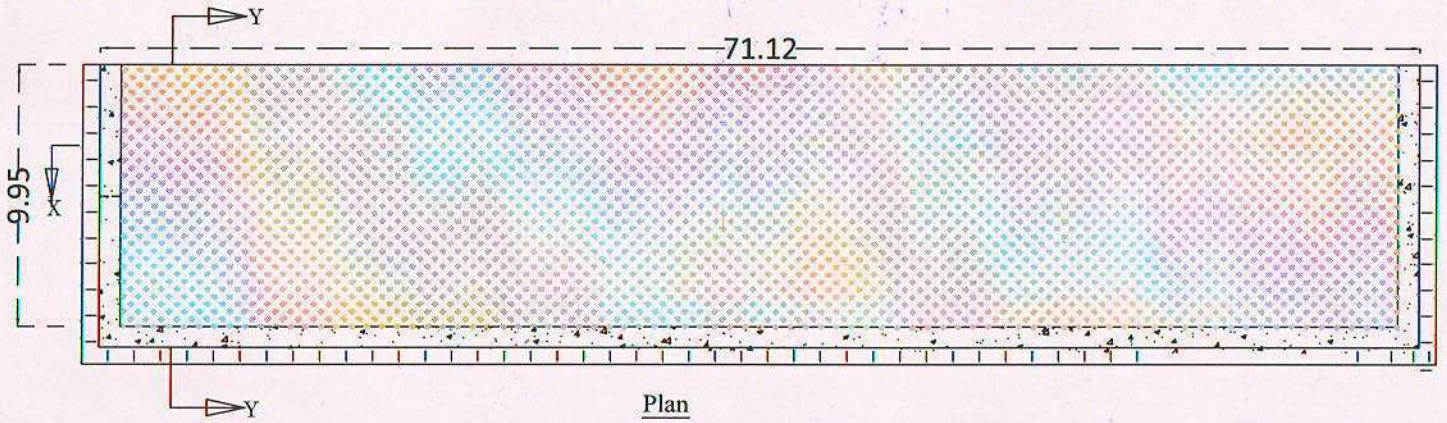
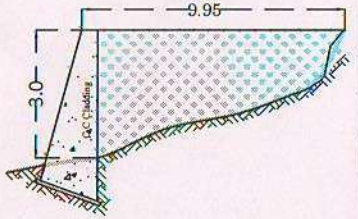
Name of Project Tundah-II H.E.P(24.0MW)

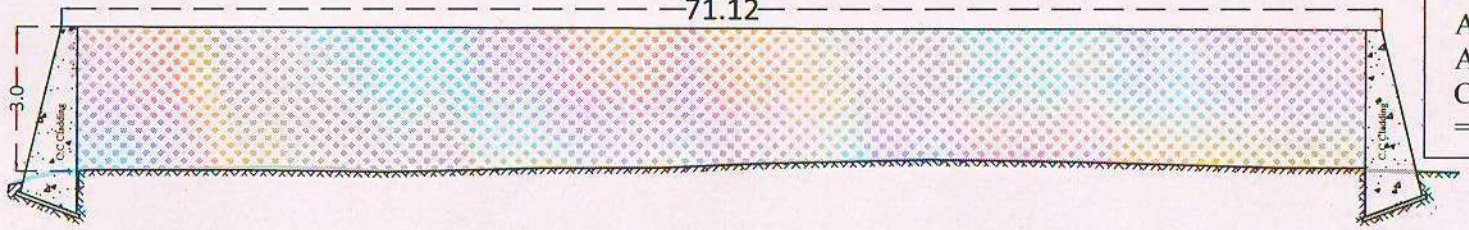
Dumping site No-2 (Along water conductor system-1)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area = 71.12m X 9.95m=707.64m²
Average Height =3.0m
Capacity of muck dumping
= 707.64x3=2122.92cum.

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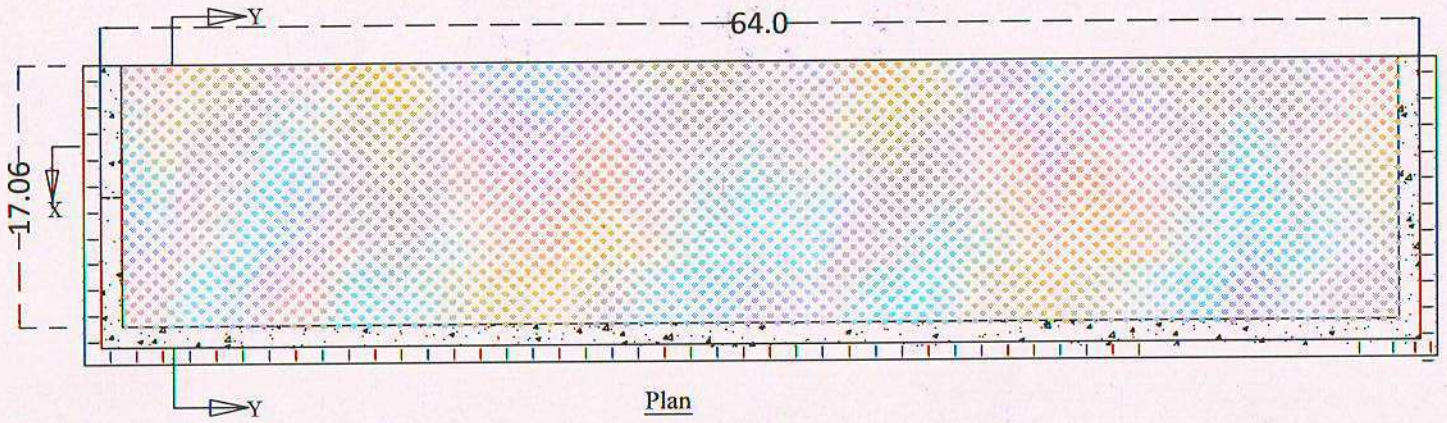
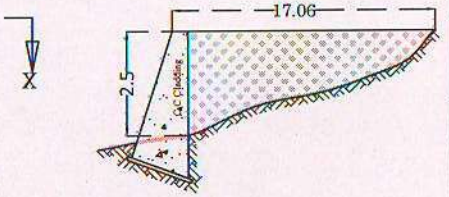
Name of Project Tundah-II H.E.P(24.0MW)

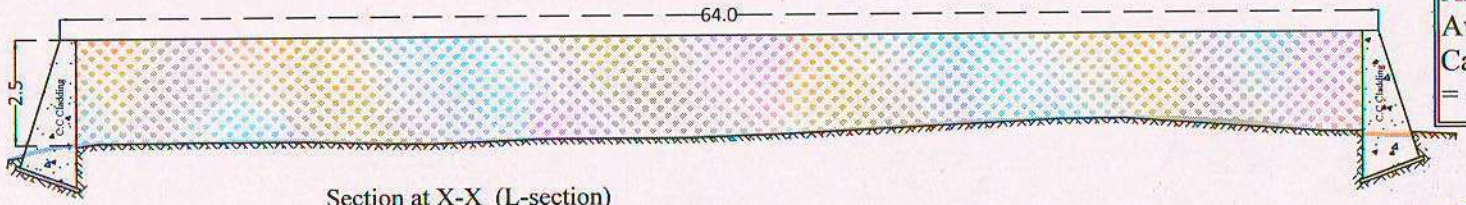
Dumping site No -3(Near De-silting Tank)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area = 64.0m X 17.06m=1091.84m²
Average Height =2.5m
Capacity of muck dumping
= 1091.84x2.5=2729.60um.

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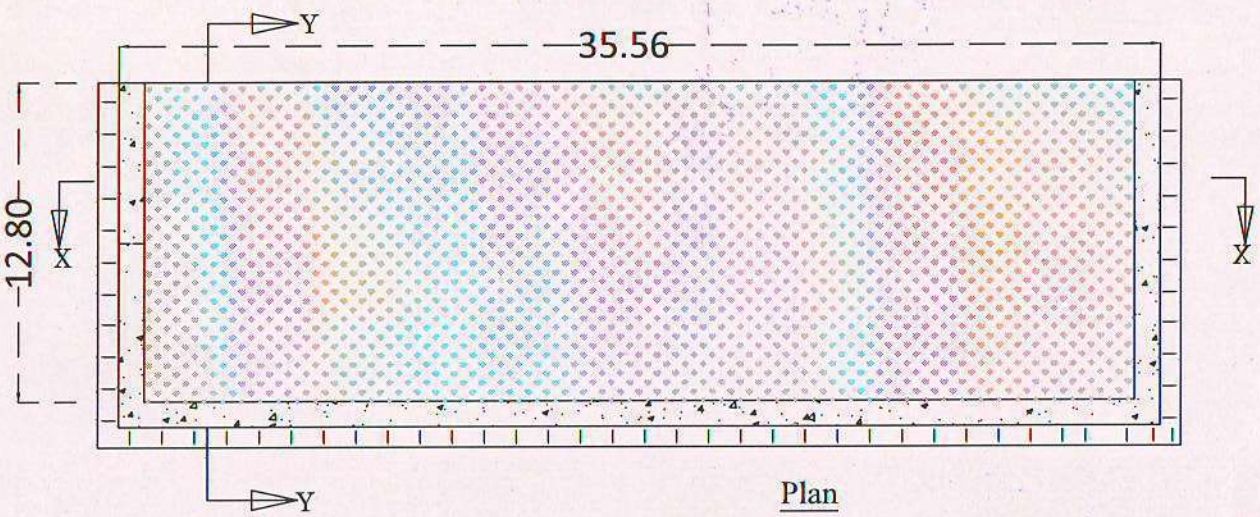
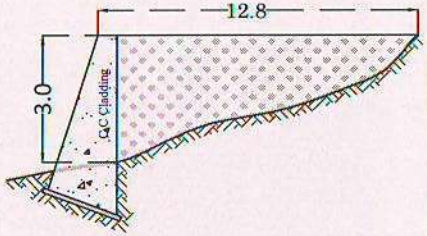
Name of Project Tundah-II H.E.P(24.0MW)

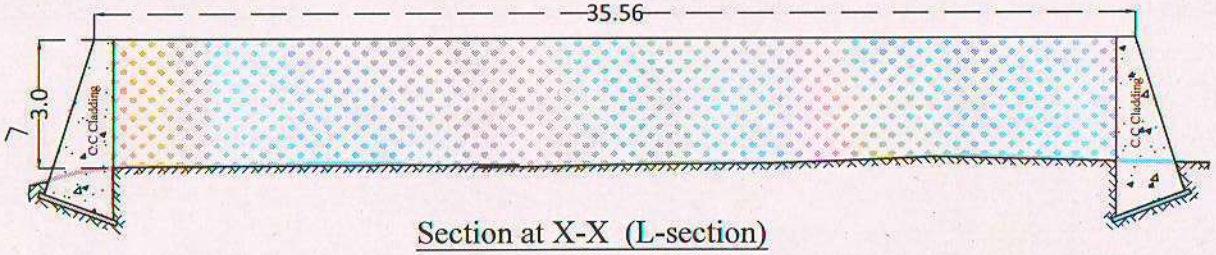
Dumping site No - 4 (Near Outlet Point of H.R.T-I)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area = 35.56m X 12.80m=455.16m²
Average Height =3.0m
Capacity of muck dumping
= 455.16x3=1365.48cum.

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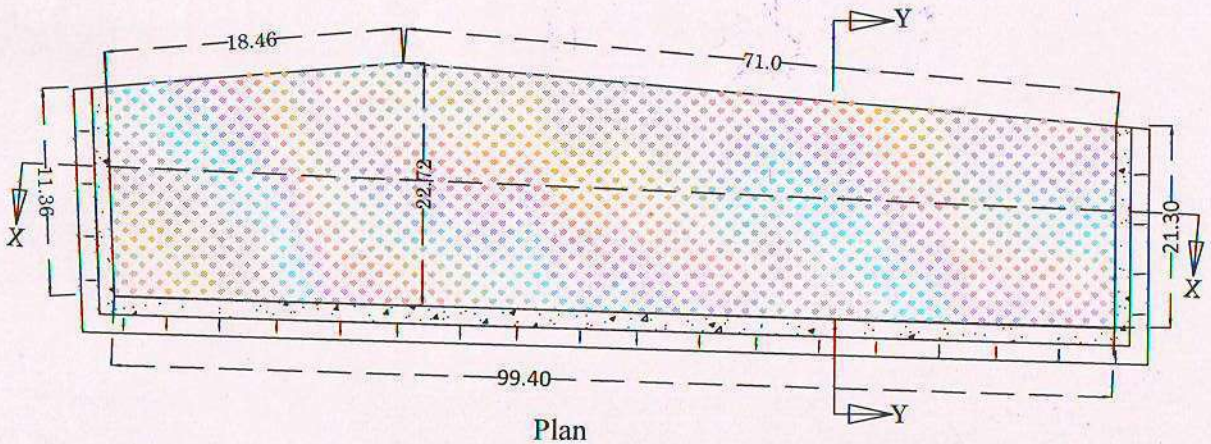
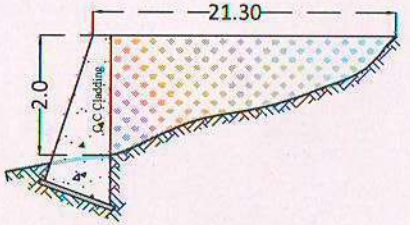
Name of Project Tundah-II H.E.P(24.0MW)

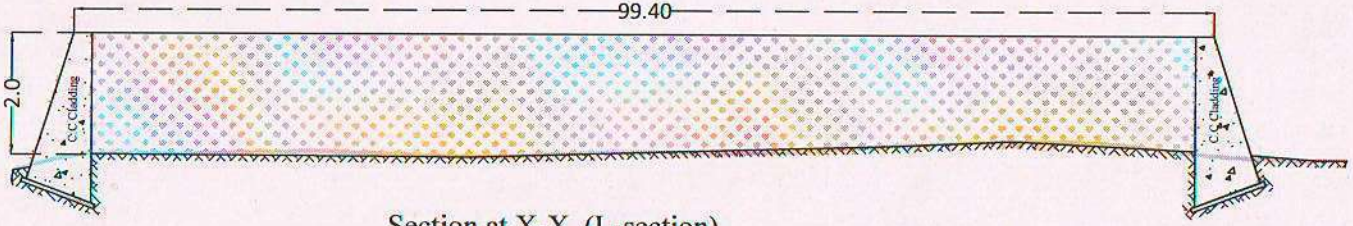
Dumping site No-5 (Along the Apporach road -II to Barrage site)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area =2078.0m²
Average Height =2.0m
Capacity of muck dumping
=2078.0x2.0=4156.0cum.

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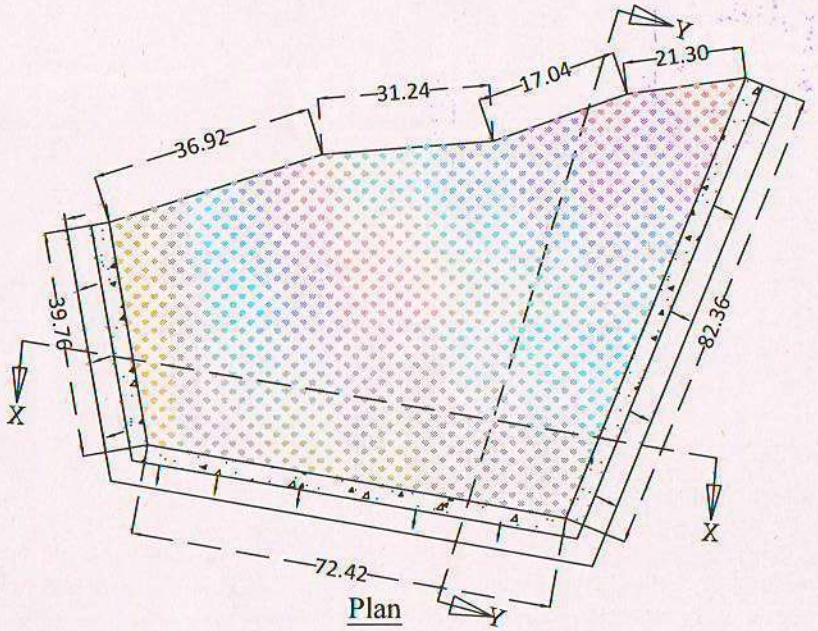
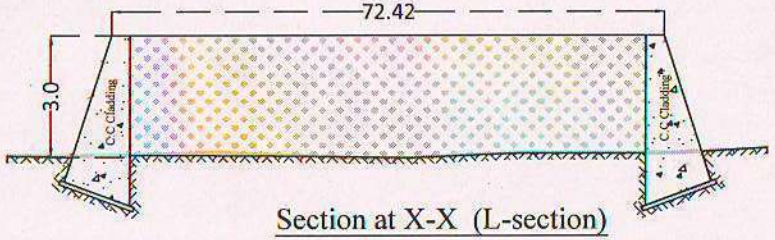
Name of Project Tundah-II H.E.P(24.0MW)

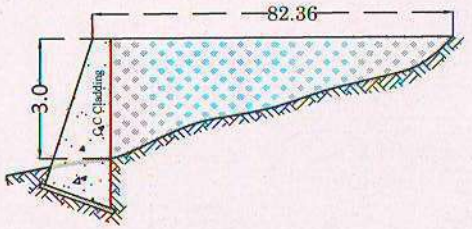
Dumping site No-6 (Along the Apporach road -II to Barrage site)



Plan



Section at X-X (L-section)



Section at Y-Y (Cross-Section)

Area =5254.0m²
Average Height =3.0m
Capacity of muck dumping
=5254.0x3.0=15762.0cum.

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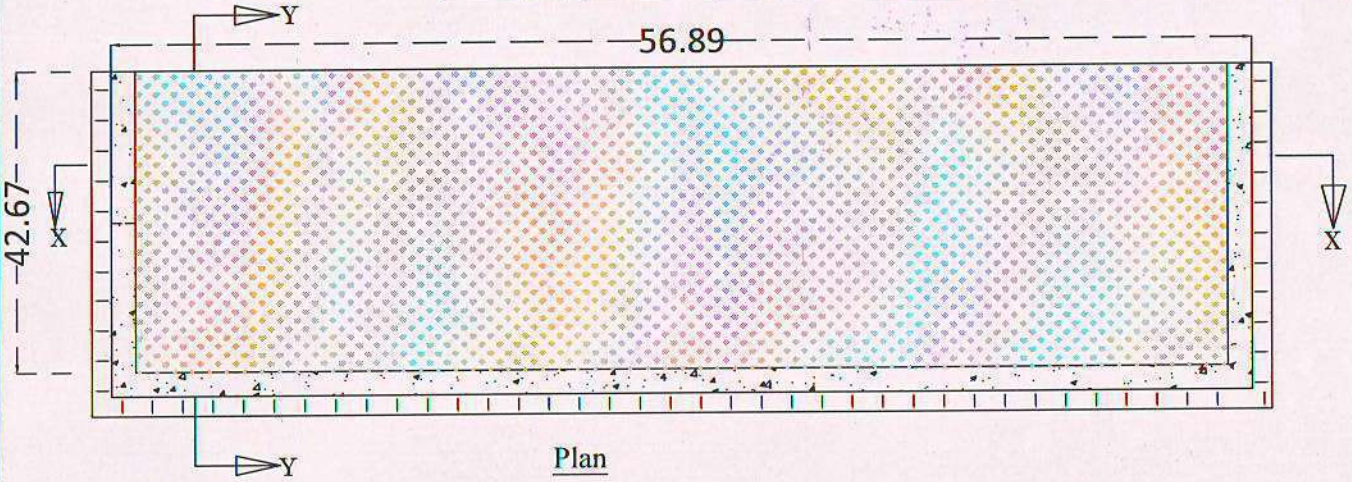
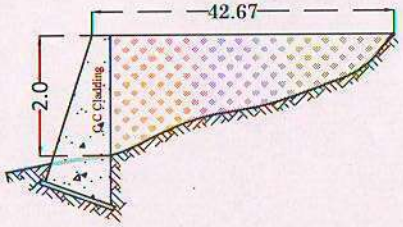
84

Name of Project Tundah-II H.E.P(24.0MW)

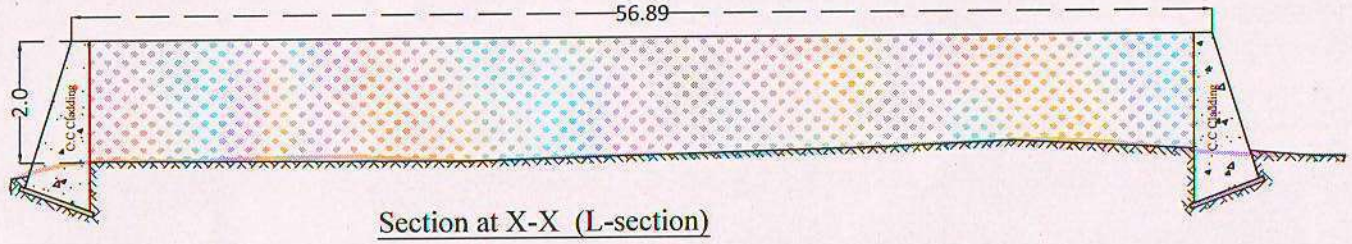
Dumping site No-7 (Along the Apporach road-II to Barrage site)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area =56.89m X 42.67m=2427.49m²
Average Height =2.0m
Capacity of muck dumping
= 2427.49x2.0=4854.98cum.

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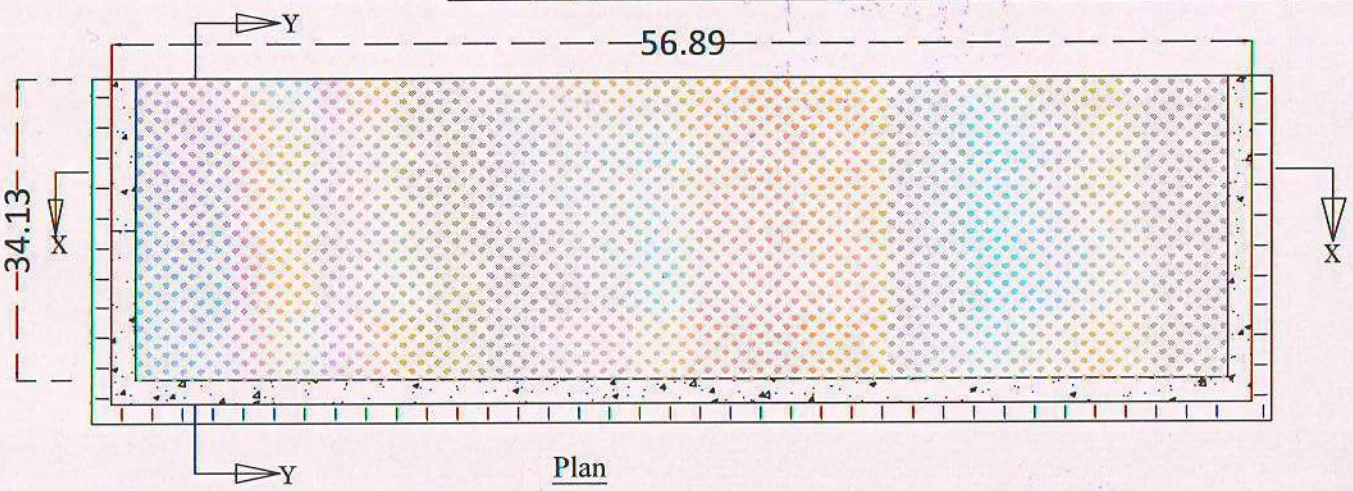
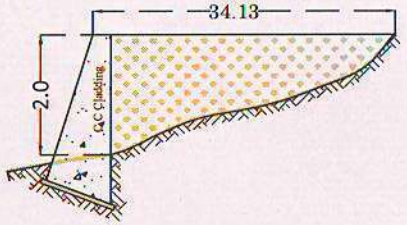
Name of Project Tundah-II H.E.P(24.0MW)

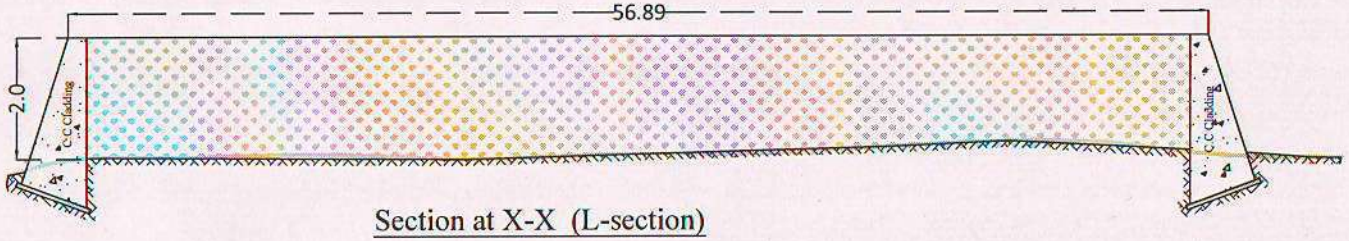
Dumping site No-8 (Along the Apporach road-II to Barrage site)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area =56.89m X 34.13m=1941.65m²
Average Height =2.0m
Capacity of muck dumping
= 1941.65x2.0=3883.30cum.

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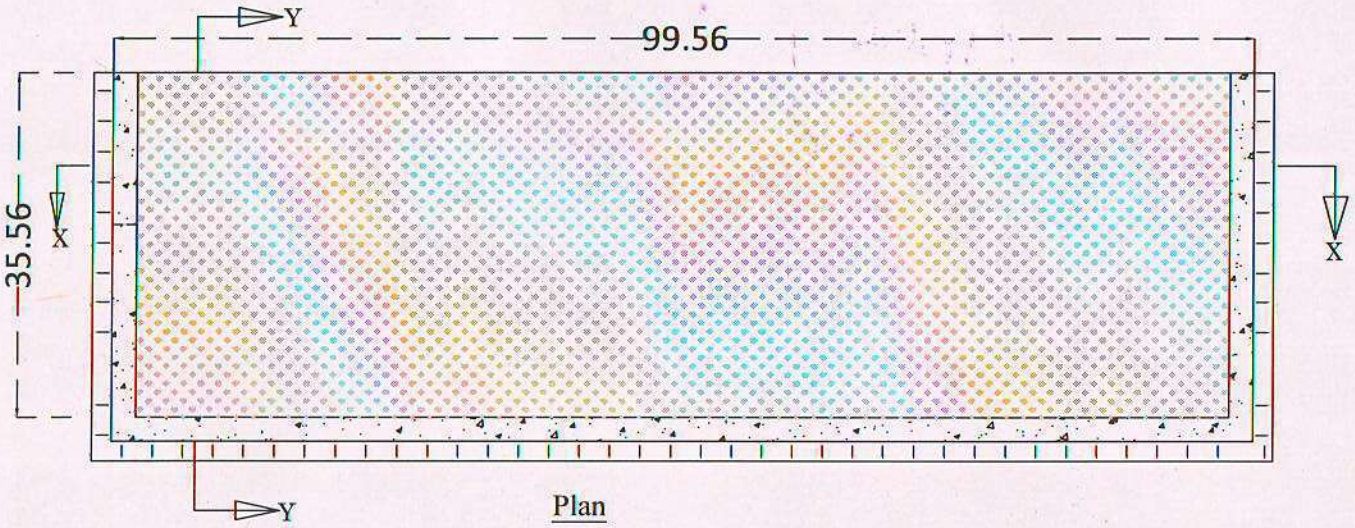
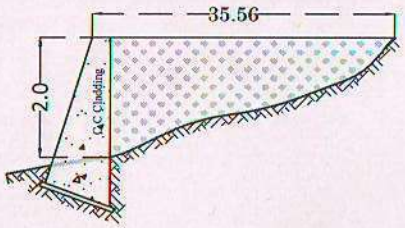
Name of Project Tundah-II H.E.P(24.0MW)

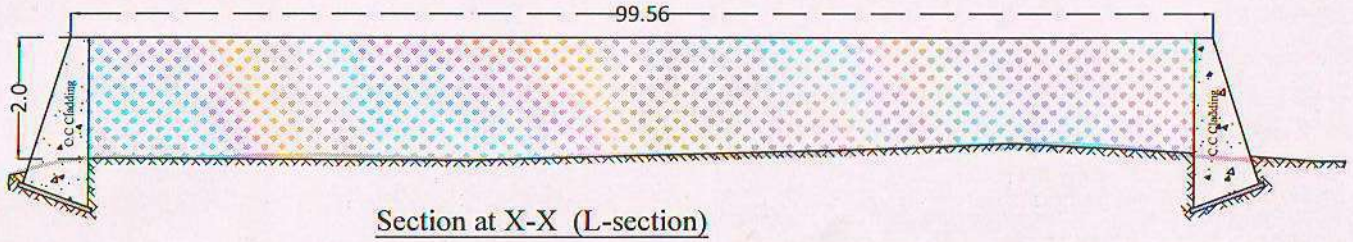
Dumping site No-9 (Near Adit-I)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area =99.56m X 35.56m=3540.35m²
Average Height =2.0m
Capacity of muck dumping
= 3540.35x2.0=7080.70cum.

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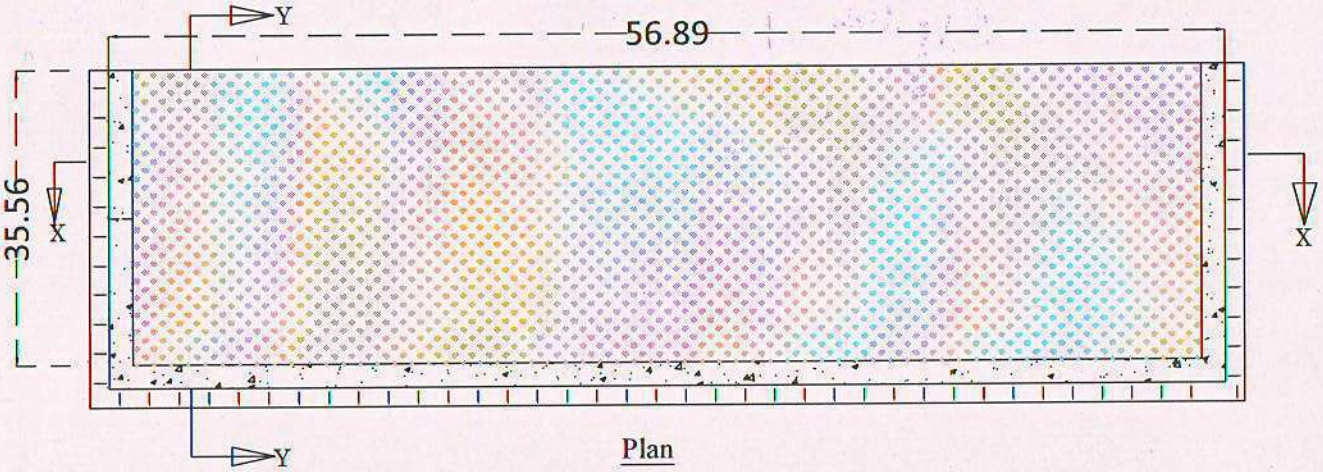
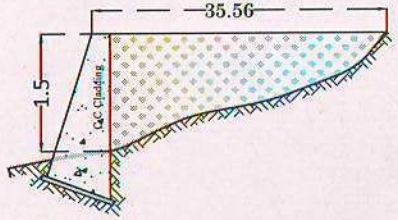
Name of Project Tundah-II H.E.P(24.0MW)

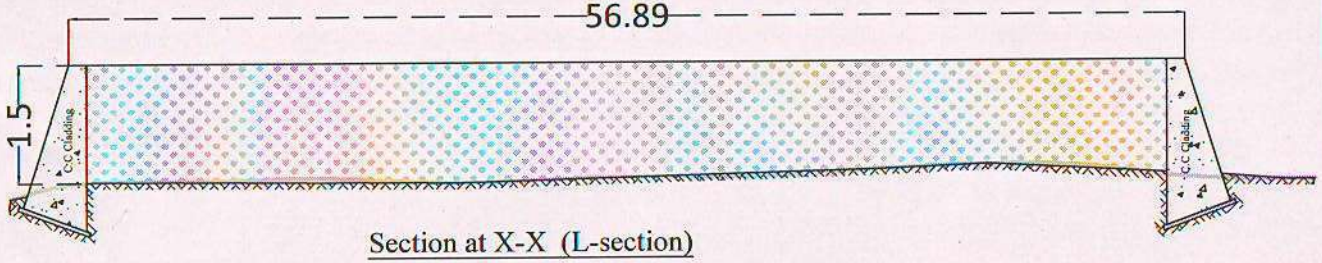
Dumping site No-10 (Along the Apporach road-II to Barrage site)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area =56.89m X 35.56m=2023.0m²
Average Height =1.5.0m
Capacity of muck dumping
=2023.0x1.5=3034.50cum.

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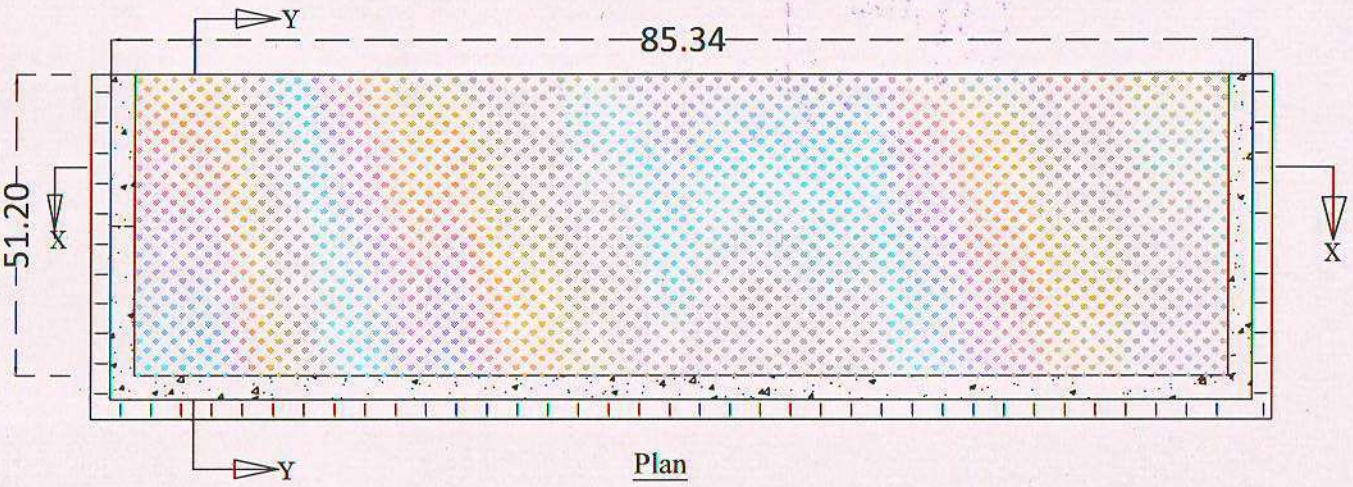
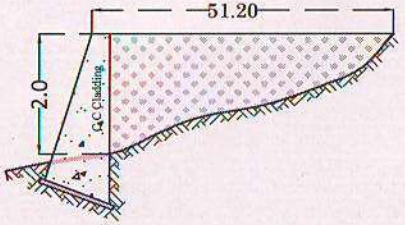
Name of Project Tundah-II H.E.P(24.0MW)

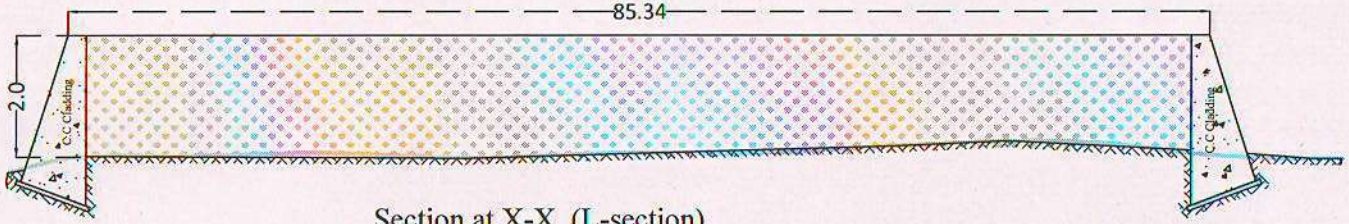
Dumping site No-11 (Along the Apporach road-II to Barrage site)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area =85.34m X 51.20m=4369.40m²
Average Height =2.0m
Capacity of muck dumping
= 4369.40x2.0=8738.80cum.

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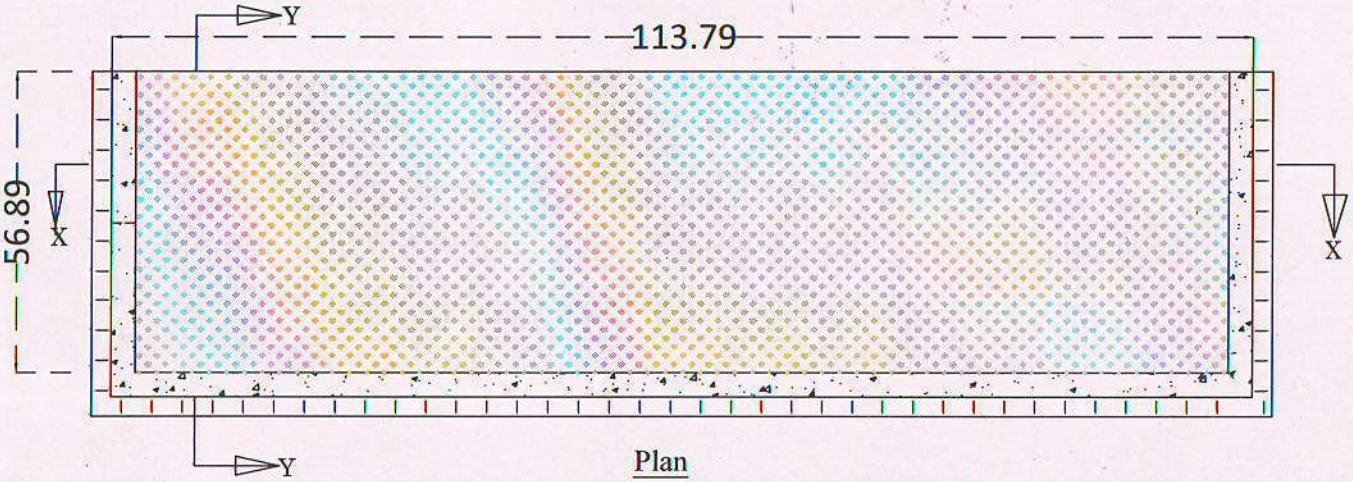
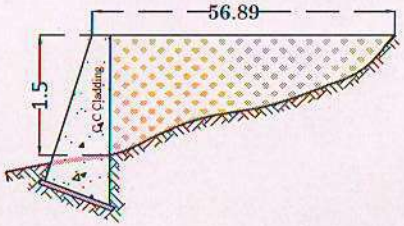
Name of Project Tundah-II H.E.P(24.0MW)

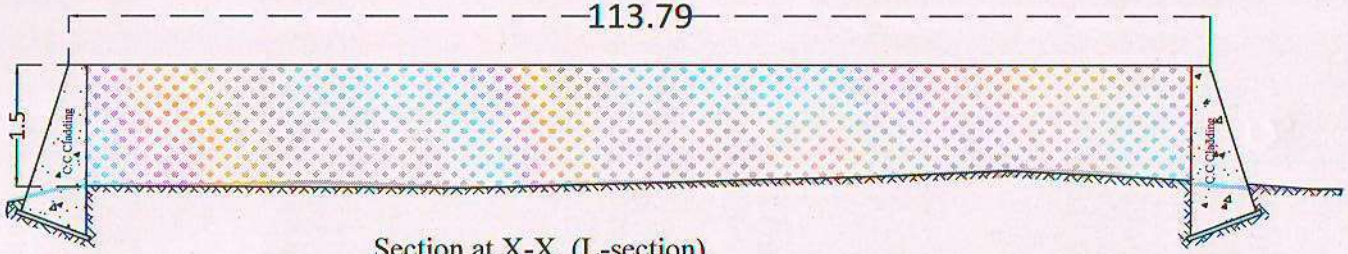
Dumping site No-12 (Near Adit-II)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area =113.79m X 56.89m=6473.51m²
Average Height =1.5m
Capacity of muck dumping
= 6473.51x1.5=9710.27cum.

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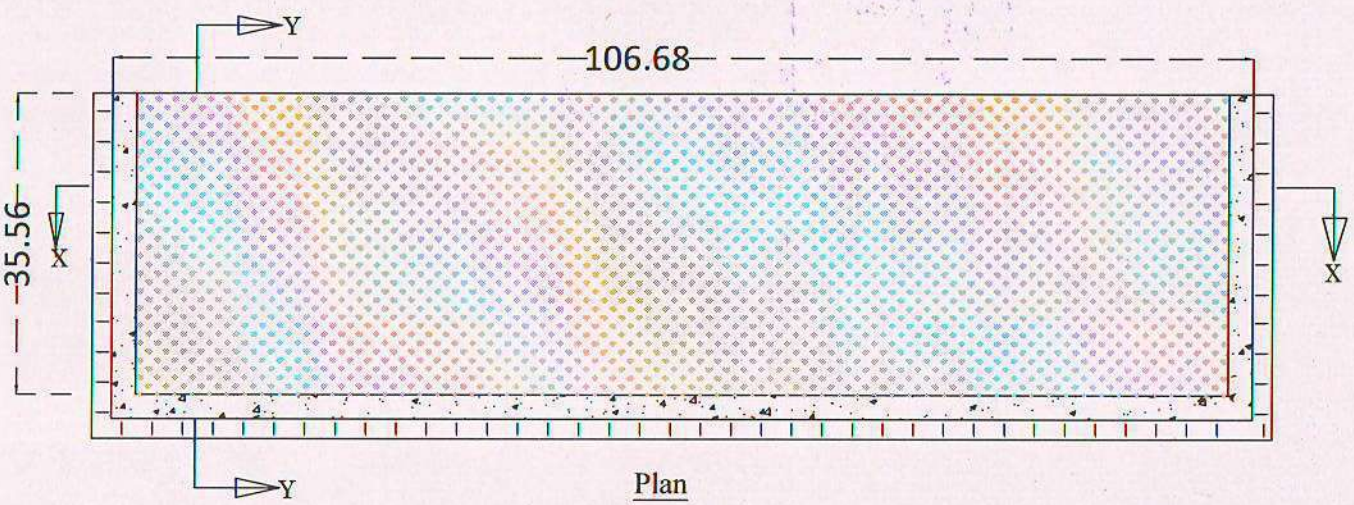
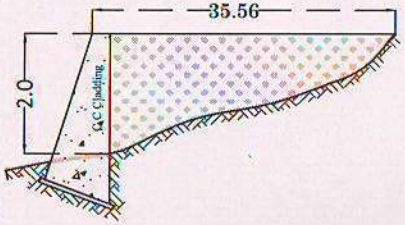
Name of Project Tundah-II H.E.P (24.0MW)

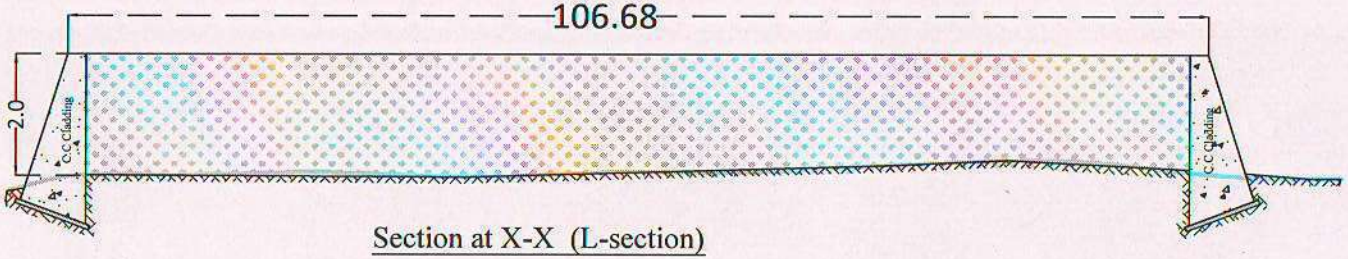
Dumping site No-13 (Along the Apporach road to vertical drop shaft)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area =106.68m X 35.56m=3793.54m²
Average Height =2.0m
Capacity of muck dumping
= 3793.54x2.0=7587.08cum.

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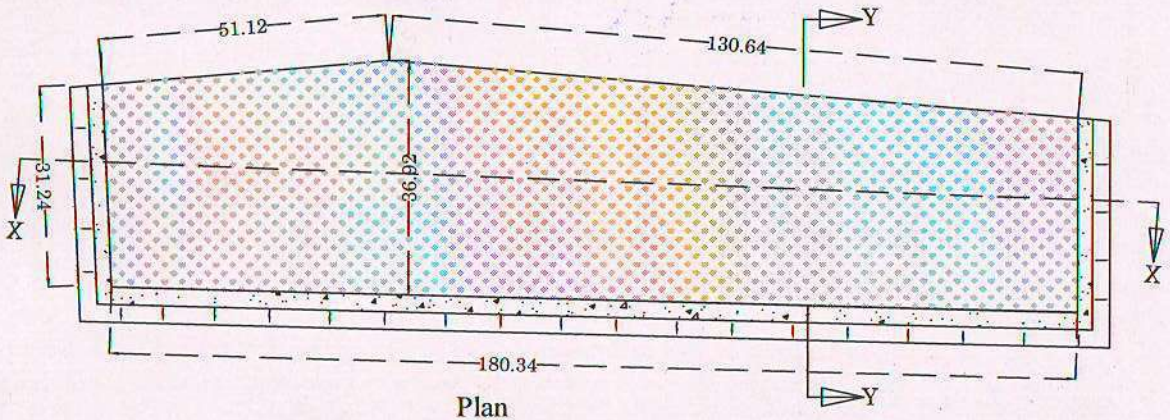
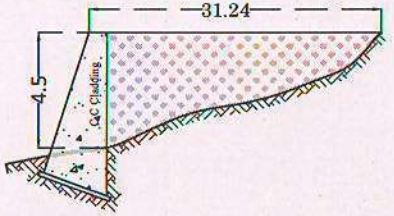
Name of Project Tundah-II H.E.P(24.0MW)

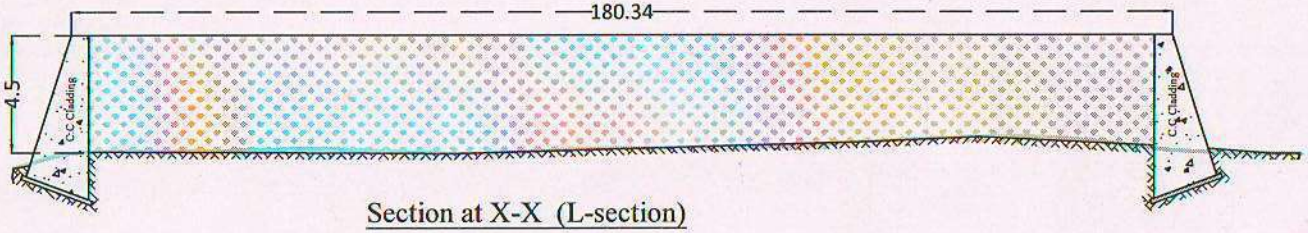
Dumping site No-14 (Near Power House)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area=6027.0m²
Average Height =4.5m
Capacity of muck dumping
= 6027.0x4.5=27121.50cum.

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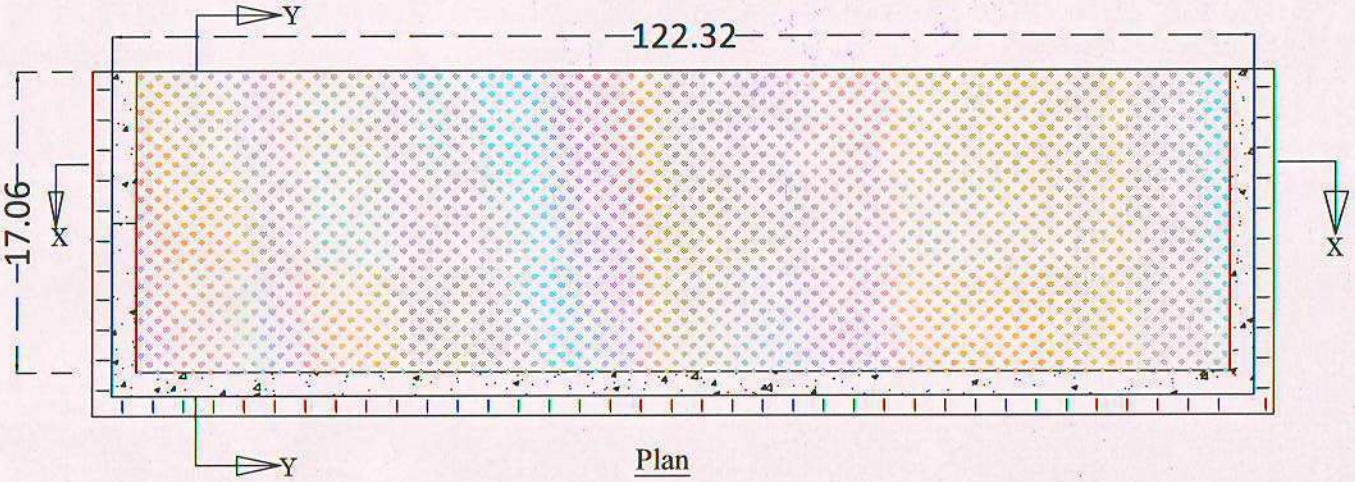
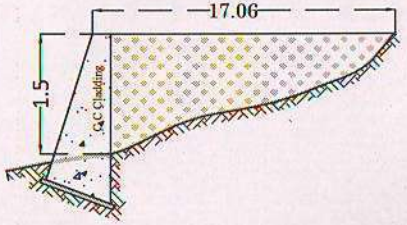
Name of Project Tundah-II H.E.P(24.0MW)

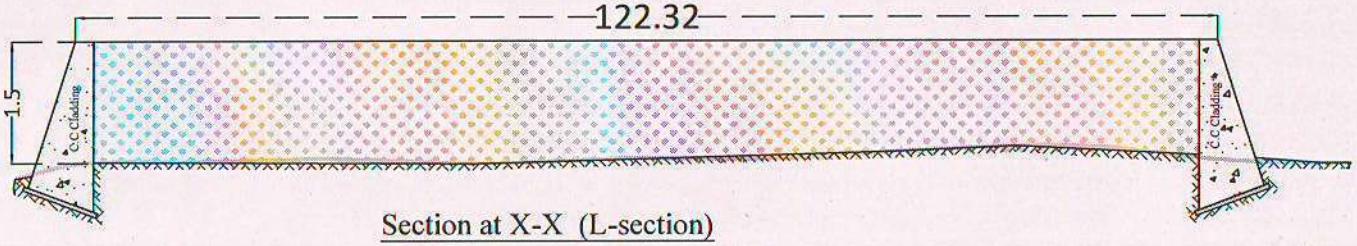
Dumping site No-15 (Along the Apporach road to power house & tail race)



Plan



Section at Y-Y (Cross-Section)



Section at X-X (L-section)

Area =122.32m X 17.06m=2086.77m²
Average Height =1.5m
Capacity of muck dumping
= 2086.77x1.5=3130.15cum.

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